

The Virginia Oyster Heritage Program



The oyster is a keystone species in Virginia's coastal waters.

Oysters grow naturally in reefs which provide habitat for many species of finfish and shellfish. Oysters are natural water purifiers. They filter algae and sediments from our coastal waters, which increases water clarity and improves light penetration. Seagrass beds, which require light, benefit from the oyster's filtering effects and in turn

provide habitat and feeding grounds for many other important species of fish and birds. There is no doubt oysters and oyster reefs provide us with very direct economic and environmental benefits.

At the peak of Virginia's oyster harvesting heyday in the early 1900's, annual catches exceeded 9 million bushels. By 1958 landings were about 4 million bushes.

Total landings for the 1997/98, season were just 14,295 bushels, only 1% of what was here even 35 years ago. Disease, pollution, and harvesting have been the culprits. Today the habitat, water quality, and economic benefits of thriving oyster populations have been nearly lost to the great detriment of Virginia's coastal ecosystems and economy.



Virginia
Oyster Reef
Heritage Foundation

THE VIRGINIA OYSTER HERITAGE PROGRAM

Recent efforts by the Virginia Marine Resources Commission, the Virginia Institute of Marine Science, the Chesapeake Bay Foundation and others, have begun to reverse oyster population declines in rivers such as the Piankatank, the Great Wicomico, the Lafayette, the James and the Elizabeth. Since 1993, the Virginia Marine Resources Commission has worked with various partners to build three-dimensional reefs in these rivers; many stocked with disease-tolerant oysters. Oyster survival and reproduction have vastly improved on these reefs.

In March 1999, the Virginia Department of Environmental Quality's Coastal Resources Management Program and the Virginia Marine Resources Commission launched a bold initiative to capitalize on these earlier accomplishments, and established a partnership of Virginia state agencies, federal agencies, nonprofit organizations and business groups. The Virginia Oyster Heritage Program was created to bring more partners into reef restoration efforts in the Commonwealth, garner greater financial resources towards reef construction, and to take a new approach to earlier reef building efforts – establishment of 3-dimensional reefs surrounded by enhanced harvest areas.



Palace Bar Reef, a three-dimensional oyster reef constructed by VMRC in 1993. Photo courtesy of VMRC

The program will undertake large-scale oyster restoration throughout Virginia's coastal zone—including the seaside. On August 4, Secretary of Natural Resources John Paul Woodley joined representatives from the state, localities,



A single adult oyster can filter up to 60 gallons of water a day. Before their decline, the Bay's oysters could filter an amount of water equal to the volume of the entire Bay in three to six days. Today, it takes a year or more for our remaining oysters to do the same job.

Photos courtesy of CBF



federal agencies, business and non-profit groups, in an official ceremony on the Piankatank River to "kick-off" the Virginia Oyster Heritage Program.

ELEMENTS OF THE VIRGINIA OYSTER HERITAGE PROGRAM

- ◆ Construct 3-dimensional (6-8 feet tall) oyster broodstock sanctuary reefs which cannot be harvested.
- ◆ Create harvest enhancement areas by spreading a 6-10 inch deep layer of shell around the broodstock sanctuary reefs. This will provide a sustainable fishery for Virginia watermen.
- ◆ Monitor reefs to determine their success in increasing oysters, water clarity, and biodiversity.
- ◆ Provide educational materials on the oyster restoration effort; train and use volunteers for reef restocking efforts; and encourage backyard "oyster gardening" to augment restoration efforts.



Watermen harvesting oysters using a dredge. Photo courtesy of VMRC

PHASE ONE - RAPPAHANNOCK RIVER

Phase One of the Virginia Oyster Heritage Program includes construction of nine, one-acre 3-dimensional reefs in the Rappahannock River. These broodstock sanctuary reefs will each be surrounded by about 25-acres of restored shell bottom to enhance the oyster fishery. When Phase One is complete the program will address another area within Virginia's coastal zone.

Why the Rappahannock?

Historically, the Rappahannock River has had some of the most productive oyster reefs in the state. The lower Rappahannock has been closed to harvesting for about five years, allowing natural selection to progress to the point that we now have large, apparently disease-tolerant broodstock oysters, but almost no available shell to provide habitat for their offspring. The Rappahannock River is particularly promising because the large 5- to 6-year-old oysters found here produce significantly more offspring than 1- to 2-year-old oysters. We know that fecundity (reproduction) increases exponentially with age

in oysters, and we also know, from old oyster shells found in Virginia, that they can reach 50 years of age.

What restoration work is underway?

Construction of the first of the nine reefs in the Rappahannock River has been permitted, including 25 acres of restored harvest area surrounding the reefs. Construction of these reefs is slated to begin this spring. The Virginia Marine Resources Commission has completed a stock assessment of the reef area. This assessment included a survey of the quantity and distribution of oysters in the restoration areas and an analysis of potentially usable river bottom.



The Virginia Marine Resources Commission contracted with watermen to help clean and prepare the river bottom prior to construction of the new reefs. Photo courtesy of VMRC.

Per Site Construction Costs
One Acre of 3-D Sanctuary Reef
\$100,000

(Based on 100,000 bushels of shell at \$1.00 per bushel)

Broodstock Hatchery Seed \$3,125
(Based on one acre of sanctuary reef)

Watermen Contracts \$31,200
(To clean and prepare each 26 acre site)

25 Acres of 2-D Shell Planting for Enhanced Areas \$250,000
(Based on \$1.00/bushel of shell and 10,000 bushels per acre of 10" deep shell.)

Total Cost Per Site \$384,325



VIRGINIA OYSTER HERITAGE PROGRAM PARTNERS

State Organizations

Virginia Department of Environmental Quality/Coastal Resources Management Program
Virginia Marine Resources Commission
Virginia Institute of Marine Science
Virginia Estuarine and Coastal Research Reserve
Virginia Economic Development Partnership
Virginia Department of Conservation and Recreation
Virginia Sea Grant Consortium
Virginia Office of the Attorney General
Virginia Office of Chesapeake Bay Commission

Federal Agencies

NOAA Office of Ocean and Coastal Resource Management
Army Corps of Engineers
NOAA National Marine Fisheries Service/Chesapeake Bay Office
NOAA National Marine Fisheries Service/Restoration Center
NOAA Office of Response and Restoration
Department of Defense/Navy
EPA Chesapeake Bay Program Office
U.S. Fish and Wildlife Service/White Marsh Office & Eastern Shore Refuge

Private Organizations

Virginia Environmental Endowment
Coastal Conservation Association of Virginia
Chesapeake Bay Foundation
Virginia Manufacturers Association
Watermen of Virginia
Kellum Brand Seafood
Virginia Seafood Council
Virginia Chamber of Commerce

WE NEED YOUR HELP TO RESTORE OYSTERS TO ALL OF VIRGINIA'S COASTAL WATERS!

The Virginia Oyster Heritage Program has raised almost enough funds from government sources to support Phase One of the Program, and continues to seek additional state and federal funding. Each reef site will cost about \$400,000 to construct! Private donations are needed to help raise the millions of dollars required to restore oysters to all of Virginia's Chesapeake Bay tributaries and the seaside bays of Virginia's Eastern Shore.



The **Virginia Oyster Reef Heritage Foundation** has been established to conduct the private fundraising aspects of the Virginia Oyster Heritage Program. The Foundation seeks and accepts private funds on behalf of the Program in order to achieve the Program's goals. The Virginia Environmental Endowment has awarded the Program a \$140,000 challenge grant to encourage private businesses and individuals to get involved

in this initiative. For every dollar awarded to the Program by VEE, the Foundation must raise 2 dollars in private cash match. The Foundation must raise \$280,000 in private donations to meet this challenge!

Please consider a donation to the Foundation, and help brighten the future of Virginia's oyster population! In doing so, you also show your support for cleaner coastal waters and increased species habitat and diversity!

Mail your tax deductible contribution payable to:

**Virginia Oyster Reef Heritage
Foundation, Inc.
610 Moorefield Park Drive
Richmond, Virginia 23236-3655
VORHF Corporate ID: 54-1954062**

Thanks to Mays and Valentine for their assistance in setting up the Foundation, George Sawyer for serving as Chairman, Clifford Schroeder as Vice-Chairman and Charles Hicks as Treasurer.

For more information about the Virginia Oyster Heritage Program, please call Laura McKay, Virginia Coastal Program at DEQ, (804)698-4323, or James Wesson, Virginia Marine Resources Commission, (757)247-2121.

This fact sheet and one million dollars in federal funds for the Virginia Oyster Heritage Program is provided by the Virginia Coastal Program at the Department of Environmental Quality through a grant from the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, under the Coastal Zone Management Act.

Cover photography credits: Chesapeake Bay Foundation; VMRC; DEQ
Design by the Virginia Office of Graphic Communications/OGC

